

Work Order ID 85887

85887

Page 1

June-18-12 10:48:39 AM

Item ID: D205-634-041

Accept

N900040100

Setup Start *NS1*

Revision ID:

Item Name: Replacement Skidtube

Stop *NS2*

Start Date: 18/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 04/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: MLJ

Date: 12/06/18 Tooling:

Date:

Run Start *NR1*

QC:

Date: SPC (Y/N):

Date:

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D2580-041

(DEO) Rev.E

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy D205-634 bluefile & type labels per PPP D205-634-041 CHG005

110

0.00

110

BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube

12/08/09

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

0.00

120

Skidtubes

Memo

0.00

Skidtubes

1- Deburr ends and remove bending marks

2- Prepare tube for welding as per QSI 004

1 0 CF 128.9

130

QC5- Inspect part completeness to step on W/O

0.00

130

QC

Memo

0.00

Quality Control

1 0 12/08/13

DAS
18
9-89

W/O:		WORK ORDER CHANGES					
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QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

140

0.00

140

Skidtubes

Memo

0.00

Skidtubes

1-Weld step D2576 as per Dwg. D2580 and QSI 004
A/R Aluminum Rod *M122399*

BE 12/08/13

2-Grind welds on step as per Dwg D2580

SAD 12-08-13

3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x 17G to start expansion and finish with 1/2 x 18G to achieve dwg dimension.

7/16 12-8-14

4-Drill holes for wearplates using DT 8217 & DT8937, 7.40" from most fwd saddle holes (ref only) Open holes to 19/64", adjust stopper not to hit web. Deburr

> 12/08/15

6-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Deburr

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Deburr

150

QC10- Inspect visual per QSI004- ground welds

0.00

150

QC

Find CAPOLY
Memo

0.00

DAS 16 5/26/16

Quality Control

W/O:		WORK ORDER CHANGES					
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Approvals: Process Plan: Date: Tooling: Date:

Run Start ***NR1***

QC: Date: SPC (Y/N): Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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160

QC5- Inspect part completeness to step on W/O

0.00

DAS 16 89

12/08/16

160

QC

Memo

0.00

Quality Control

170

Pressure Wash per QSI005 4.3

0.00

170

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.

1X **MA**
12/08/16

180

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

180

Powdercoat

Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

10:20
320°F
10:50

1X **MA**
12/08/16

ML21841

W/O:		WORK ORDER CHANGES					
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Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

QC3- Inspect Part Finish

0.00

190

QC

Memo

0.00

Quality Control

1x - 4 - 21 12/08/20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Page 6

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Required Date: 04/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200		0.00							
200									
HandFinish	Memo	0.00				1x	φ	ll	12/08/20
Hand Finishing	1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates ✓ A/R Sikaflex-291 11177443 Sikaflex expire date: 13/03 2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580 3-Inspect for foreign object per QSI 024 4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive ✓ A/R Sikaflex-291 11177443 Sikaflex expire date: 13/08 5-Wing Walk as per Dwg D2580 and QSI 005 4.4 Batch: 11177500								

1x φ ll 12/08/20

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Page 7

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Setup Start ***NS1***

Revision ID:

Item Name: Replacement Skidtube

Stop ***NS2***

Start Date: 18/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 04/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

210

QC5- Inspect part completeness to step on W/O

0.00

210

QC

Memo

0.00

Quality Control

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

220

Packaging

0.00

220

Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD205-634-041

Location: _____

PPP Rev: _____

230

QC21- Final Inspection - Work Order Release

0.00

230

QC

Memo

0.00

Quality Control

DAS 16 12/05/11

PPD 89229

12/8/22

MUS 12/08/23

MF 12-08-28

W/O:		WORK ORDER CHANGES					
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Picklist Print

June-18-12 10:48:43 AM

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Work Order ID: 85887

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Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 18/06/2012

Required Date: 04/07/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30
KJ IPP Rev P 10.02.19
per PAR09-043 EC verified by:DD
IPP Rev. O 06.02.28 Added paperwork EC
IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q
10.12.01 as per chg003 DD verf:EC IPP REV:R 12.01.23 AS
PER ECN11-684 VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4202-1		Manufactured	No			140	Each	224.0000	20	20			

D4202-1
Spacer

**

Location	Loc Qty	Loc Code
LG	184	
77727	5	
83263	179	
LG002	40	
78806	6	
79810	34	
835453	110	

D2580-1 Manufactured No

D2580-1
205 Skidtube bent detail

**

Location	Loc Qty	Loc Code
LG	4	
76570	2	
77679	2	

D2576-3 Manufactured No

D2576-3
Step (maching detail)

**

Location	Loc Qty	Loc Code
LG	76	
74136	24	
82257	52	

7/12/8/14

① CF 12-8-9

BE 12-08-13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Page 2

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Parent Item: D205-634-041

D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 18/06/2012

Required Date: 04/07/2012

Start Qty: 1.00

Required Qty: 1.00

D2855

Manufactured No

200

Each

21.0000

1

1

D2855

Cap

**

HL 12/08/20

Location

Loc Qty

Loc Code

FP002

21

B84952

x1

65519

2

73347

16

75074

3

AN3-5A

Purchased

No

200

Each

964.0000

2

2

AN3-5A

Bolt

**

HL 12/08/20

Location

Loc Qty

Loc Code

ST350

964

115371

46

117423

124

118626

31

119355

200

120187

500

121185

63

AN960JD10L

NAS1149D0332J

Purchased

No

200

Each

0.0000

2

2

*AN960JD10L *

Washer

121121708

**

(2x) HL 12/08/20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Page 3

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D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 18/06/2012

Required Date: 04/07/2012

Start Qty: 1.00

Required Qty: 1.00

ALS7-1032-130

Purchased

No

200

Each

2,108.000

50

50

AI S7-1032-130

**

Insert

Location

Loc Qty

Loc Code

ST280

51

M122474

x50

117717

27

118966

22

119775

2

ST282

2057

119530

73

120181

12

121444

1972

AN3C4A

Purchased

No

200

Each

945.0000

50

50

AN3C4A

**

BOLT

Location

Loc Qty

Loc Code

ST350

945

120187

31

120521

28

120769

38

121205

832

121556

16

M122551

x50

AN960C10L

NAS1149C0332

Purchased

No

200

Each

21.0000

50

50

*AN960C10I * ✓

**

washer

Location

Loc Qty

Loc Code

ST

21

107534

21

M122063

x50

W/O:		WORK ORDER CHANGES					
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D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 18/06/2012

Required Date: 04/07/2012

Start Qty: 1.00

Required Qty: 1.00

D3566-13

Manufactured No

200

Each

56.0000

1

1

D3566-13

Gasket

**

11/06/20

Location

Loc Qty

Loc Code

FP

10

83351

10

FP002

46

76947

1

84880

45

X1

D3566-5

Manufactured No

200

Each

52.0000

1

1

D3566-5

Gasket

**

11/06/20

Location

Loc Qty

Loc Code

FP

10

82275

10

FP002

42

80374

3

82274

6

84881

33

1388821

X1

D3566-1

Manufactured No

200

Each

93.0000

2

2

D3566-1

Gasket

**

11/06/20

Location

Loc Qty

Loc Code

FP

-32

FP002

125

68924

2

80919

3

83898

16

84879

72

1387442

X2

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Parent Item Name: Replacement Skidtube

Start Date: 18/06/2012

Required Date: 04/07/2012

Start Qty: 1.00

Required Qty: 1.00

D3564-11

Manufactured No

200

Each

26.0000

1

1

D3564-11

Wearshoe

**

HL 12/08/20

Location

Loc Qty

Loc Code

FG

4

B85473

77056

4

xl

FP001

22

83910

22

D3564-13

Manufactured No

200

Each

23.0000

1

1

D3564-13

Wearshoe

**

HL 12/08/20

Location

Loc Qty

Loc Code

FP001

1

71594

1

B85512

xl

FP002

22

82249

22

D3564-9

Manufactured No

200

Each

18.0000

1

1

D3564-9

Wearshoe

**

HL 12/08/20

Location

Loc Qty

Loc Code

FG

4

76950

4

FP001

14

67590

4

69943

1

82255

9

B86236

xl

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Parent Item Name: Replacement Skidtube

Start Date: 18/06/2012

Required Date: 04/07/2012

Start Qty: 1.00

Required Qty: 1.00

D3564-5

Manufactured No

200

Each

36.0000

1

1

D3564-5

Wearshoe

**

HL 12/08/20

Location

Loc Qty

Loc Code

FG

2

34806

2

FP001

34

77609

1

82254

8

84869

25

B85475

✓1

D2594-3

Manufactured No

200

Each

2,410.000

16

16

D2594-3

O-Ring, 205 Skidtube

**

HL 12/08/20

Location

Loc Qty

Loc Code

FP001

2410

65518

41

79496

984

79573

50

79755

1335

✓16

D2594-1

Manufactured No

200

Each

713.0000

16

16

D2594-1

Plug, 205 Skidtube

**

HL 11/08/20

Location

Loc Qty

Loc Code

FP001

98

73401

30

74442

18

79495

50

FP-A

615

73401

0

78590

205

84951

410

B85454

✓16

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

LIST OF MATERIALS

ITEM	QTY -041	QTY -045	QTY -047	PART NUMBER	DESCRIPTION
1	X			D2580-041	SKIDTUBE ASSEMBLY
2		X		D2580-045	SKIDTUBE ASSEMBLY
3			X	D2580-047	SKIDTUBE ASSEMBLY
4	1	1	1	D2500-1-190	EXTRUSION
5			16	D2570	BUSHING
6	1	1	1	D2576-3	STEP
7	20	24	25	D2579	SPACER
8	16	16	8	D2594-1	PLUG
9	16	16	8	D2594-3	O-RING
10	1	1	1	D2596	205 WEB
11	1	1	1	D2855	AFT CAP
12	1	1		D3564-5	WEARSHOE
13	1	1		D3564-9	WEARSHOE
14	1	1		D3564-11	WEARSHOE
15	1	1		D3564-13	WEARSHOE
16	2	2		D3566-1	GASKET
17	1	1		D3566-5	GASKET
18	1	1		D3566-13	GASKET
19			1	D4406-041	WEARPLATE ASSEMBLY
20			1	D4406-043	WEARPLATE ASSEMBLY
21	50	50		ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
22	50	50		AN3C4A	BOLT
23	2	2	2	AN3-5A	BOLT
24			8	AN4-45A	BOLT
25	50	50		NAS1149C0332R	WASHER (AN960C10L)
26	2	2	2	NAS1149D0332J	WASHER (AN960JD10L)
27			8	MS21042-4	NUT (OR MS21042L4)

GENERAL NOTES:

- MATERIAL: N/A
- FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4
- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: NONE
- WEIGHT: D2580-041 = 34.5 lbs
D2580-045 = 34.5 lbs
D2580-047 = 37.7 lbs
- WELDING PER DART QSI 004.
- INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/-291.
- INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

DEO ATTACHED

RELEASED
2011-08-29

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 85887-16J
12/06/18

E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9183	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	98.08.26
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN	RF		
CHECKED	RF		
MFG. APPR.	RF		
APPROVED	RF		
DE APPR.	RF		
DATE	11.06.21		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D2580	REV. E SHEET 1 OF 8
TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
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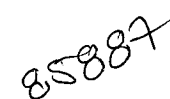
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN	4	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2580	SHEET 2 OF 8
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
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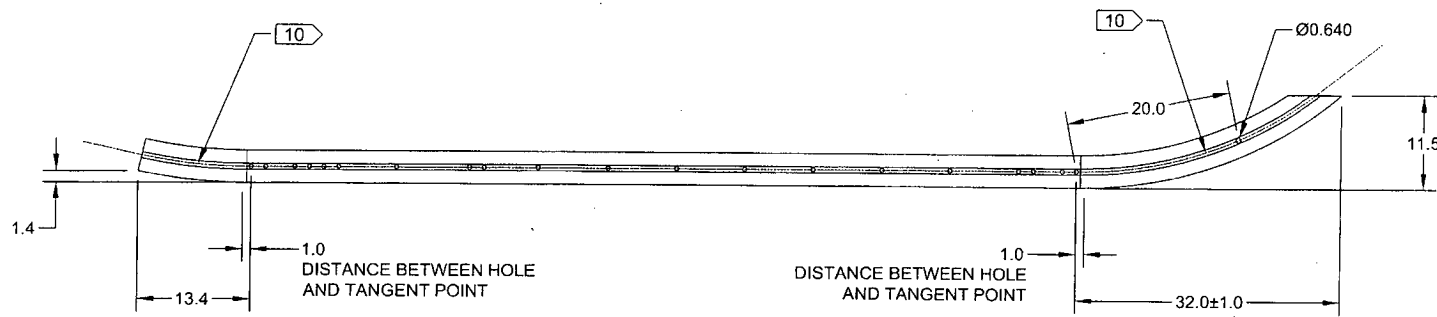
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2580-1 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED

RELEASED
2011-08-28
JW

DESIGN	#	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2580	SHEET 3 OF 8
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
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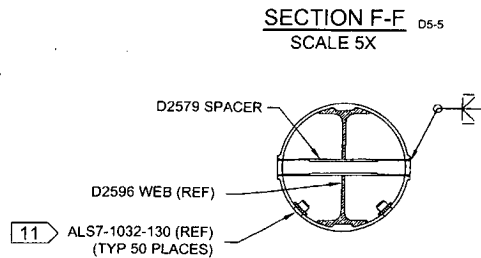
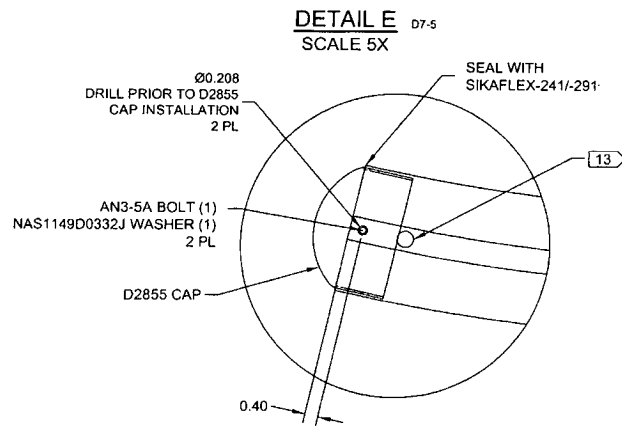
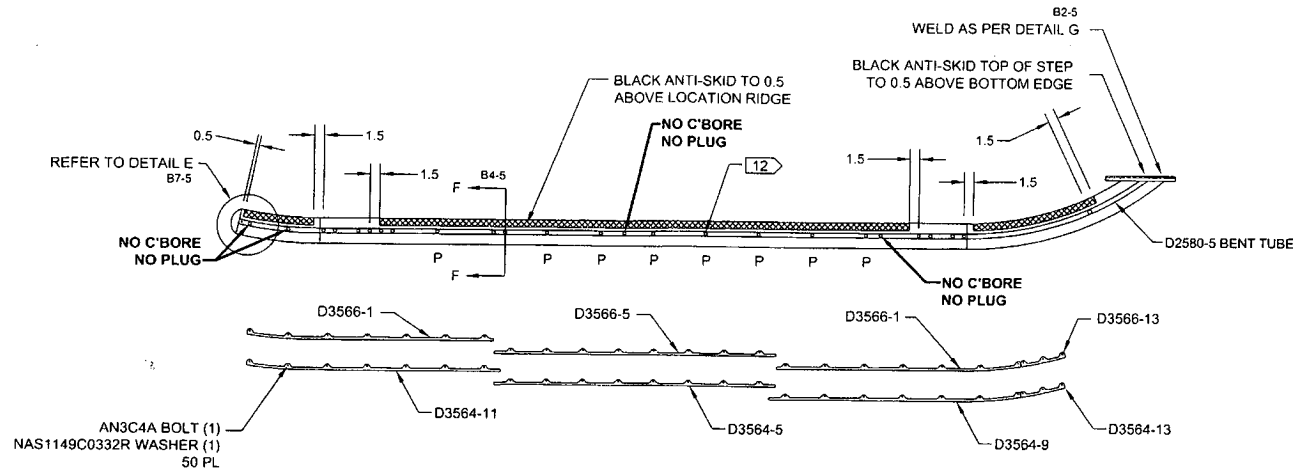
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

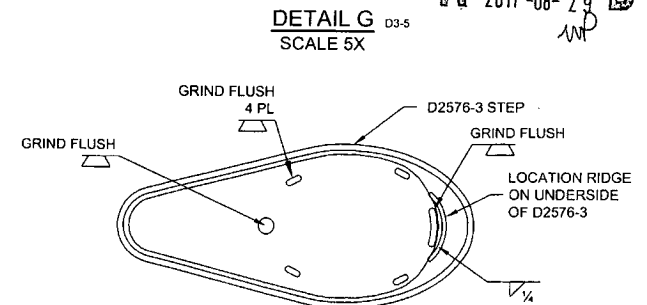
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (24 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP



DESIGN	4	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	AP	D2580	SHEET 4 OF 8
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	205 SKIDTUBE ASSEMBLY	NTS
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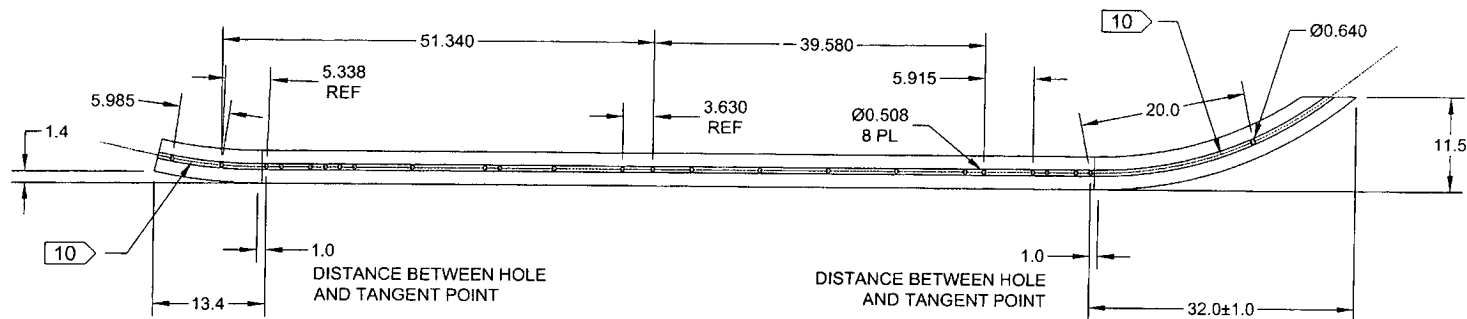
Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2580-5 BENT TUBE
(MAKE FROM D2580-101 TUBE)

DEO ATTACHED

RELEASED
2011-08-29

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	NS	D2580	SHEET 5 OF 8
APPROVED	AP	TITLE	SCALE
DE APPR.	#	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	<small>COPYRIGHT © 1988 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR CAPTION OR COMMERCIALIZED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

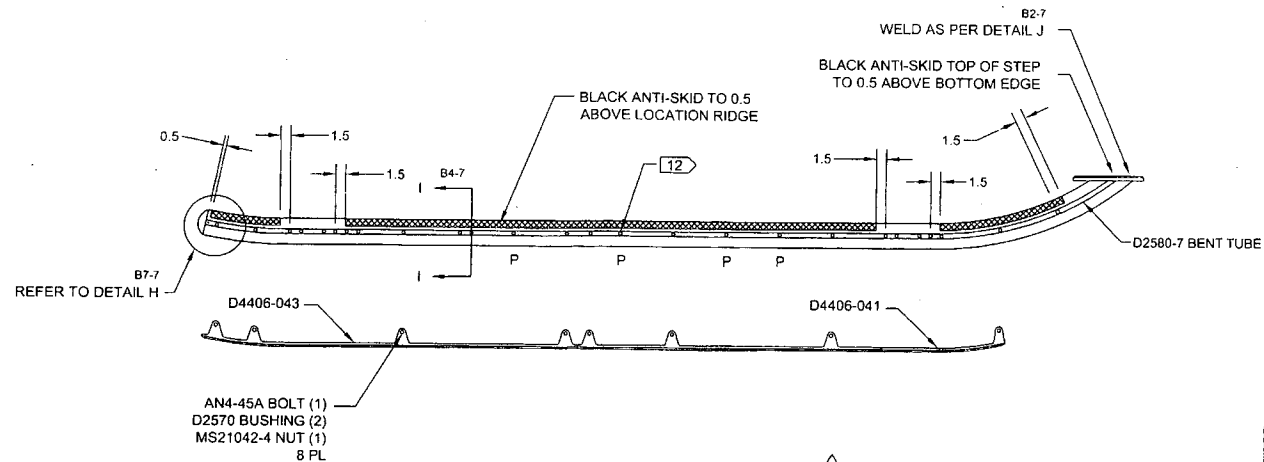
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

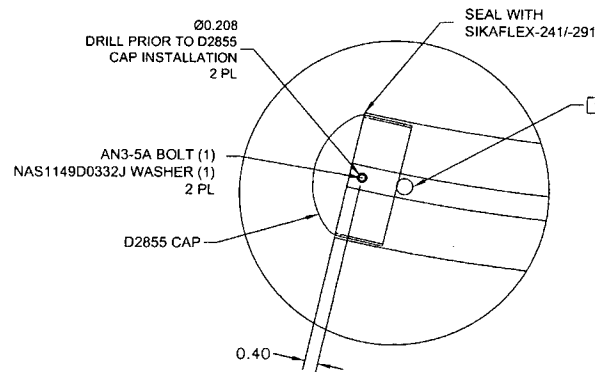
NOTE: Date & initial all entries



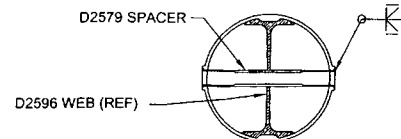
D2580-047 ASSEMBLY DETAIL

E

DETAIL H SCALE 5X



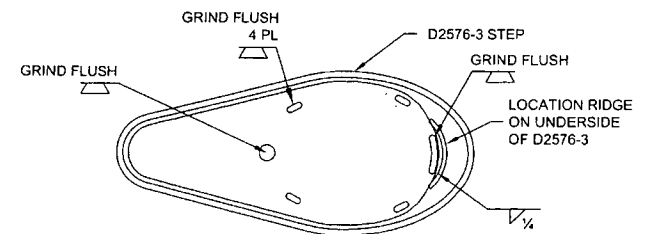
SECTION I-I SCALE 5X



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (25 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DETAIL J SCALE 5X



DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	AP	D2580	SHEET 6 OF 8
APPROVED	AP	TITLE	SCALE
DE APPR.	AP	205 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

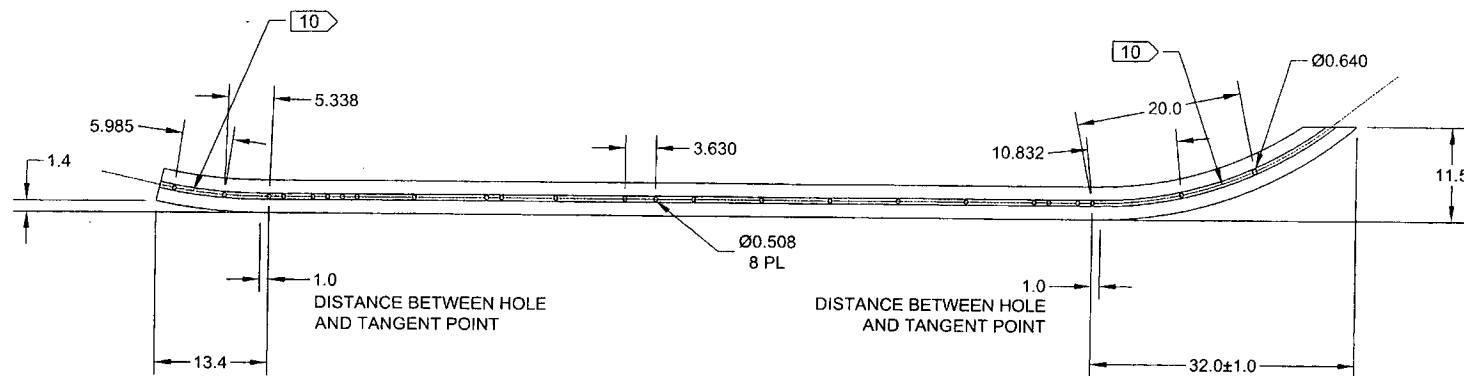
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

25287



D2580-7 BENT TUBE
(MAKE FROM D2580-101 TUBE)



DEO ATTACHED

RELEASED
2011-08-29

DESIGN	RF	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. E
MFG. APPR.	RF	D2580	SHEET 7 OF 8
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	205 SKIDTUBE ASSEMBLY	NTS
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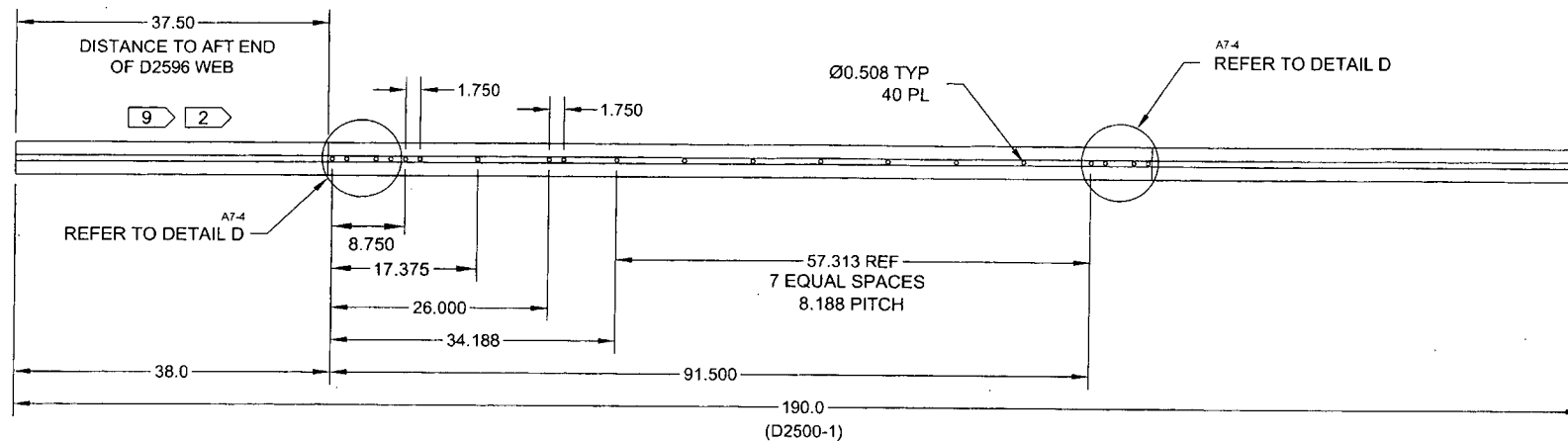
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

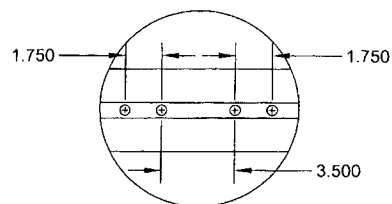
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D2580-101 TUBE



DETAIL D D3-4
C7-4
SCALE 5X

DEO ATTACHED
RELEASED
2011-08-29

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RP	DRAWING NO.	REV. E
MFG. APPR.	SS	D2580	SHEET 8 OF 8
APPROVED	RP	TITLE	SCALE
DE APPR.	#	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	<small>COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRIMER'S CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY	REV. E	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D2580-E-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>EC</i>	APPROVED <i>#</i>	DE APPR. <i>HA</i>		
DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13		

PURPOSE:

CHANGE ALL C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

WAS

QTY	QTY	QTY	PART NUMBER	DESCRIPTION
-041	-045	-047		
20	24	25	D2579	CROSS BOLT SPACER

IS

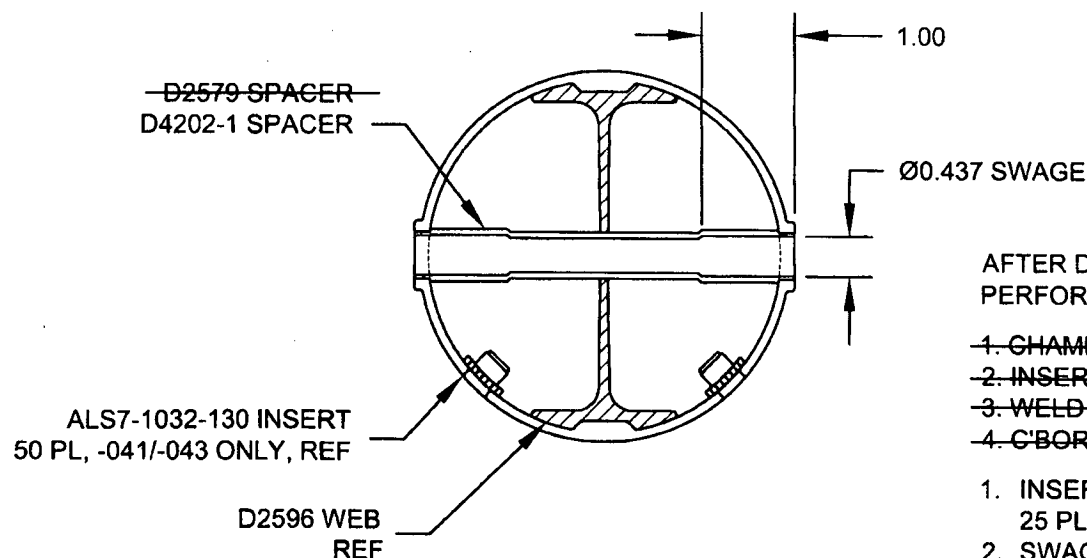
	4		* D2579	CROSS BOLT SPACER
20	20	25	D4202-1	SPACER

SECTION B-B, SECTION F-F, & SECTION I-I ARE AMENDED AS FOLLOWS
FOR ALL HOLES THAT WERE ORIGINALLY C'BORED:

* FOR -045 SKIDTUBE ONLY:

WELD 4X D2579 SPACERS PER DWG
IN LOCATIONS MARKED "NO C'BORE".
REF SHEET 4 OF DWG.

RELEASED
2011-12-14



AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

- ~~1. CHAMFER HOLE 0.050 X 45°~~
- ~~2. INSERT D2579 SPACER (20 PLACES)~~
- ~~3. WELD INTO PLACE AND GRIND FLUSH~~
- ~~4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP~~

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 20 PL (-045) OR 25 PL (-047)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION B-B, F-F, I-I
NOT TO SCALE

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries